

Application No. 09/997,417
Amendment dated April 2, 2004
Reply to Office Action of December 5, 2003

PATENT

REMARKS/ARGUMENTS

Claims 2, 4-12, 15-16 and 26-36 are presently pending in this application. Claims 1, 3, 13, 14 and 17-25 have been canceled.

Applicants note with appreciation the allowance of claims 7-12, 27-29, 31-33 and 36.

Claims 2, 4, 5, 6, 14-16 (claim 14 has been canceled herein), 26, 30, 34 and 35 were rejected for anticipation by Sorimachi (4,867,570).

Claim 26, and claims 2, 4, 5 and 6, which depend from claim 26, as well as independent claim 30, and claims 34 and 35, which depend from claim 30, were rejected for anticipation because Sorimachi discloses a distance measuring device employing triangulation and a sensor that has at least one measuring channel (W_2 , 4) between the transmission unit (W_2) and a reception unit (4) where the sensor has at least one additional channel (W_1 , 4) which has a further transmission unit (W_1) and a reception unit (4), as is shown in Figs. 1, 10 and 11 of the reference.

Dependent claims 14-19 were rejected because column 5, line 55 through column 6, line 1 disclose the difference between D_1 and D_2 .

Applicants have carefully reviewed the Sorimachi reference and could detect no reference to any difference between D_1 and D_2 . The referenced portion of the Sorimachi patent discusses the geometrical relationship between mask plate 3, lens 1 and the object 6 relative to the geometrical relationship between image sensor 4, lens 2 and the object.

In contrast, claim 14 (now canceled and incorporated in claims 26 and 30) now recites "forming a difference between the received signals of the measuring channel and the additional channel". Thus, claim 14 is not anticipated by Sorimachi.

Independent method claim 26 has been amended by incorporating therein claim 14, and claim 14 has been canceled.

Thus, independent amended claim 26 is not anticipated by Sorimachi.

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Likewise, claim 30 has been amended by incorporating therein claim 14. Claim 30 differs from claim 26 primarily in that the former employs apparatus terminology, while the latter uses method terminology.

Accordingly, amended claim 30 is also not anticipated by Sorimachi.

In view of the foregoing, applicants submit that independent claims 26 and 30 are allowable, thereby rendering dependent claims 2, 4, 5, 6, 15, 16, 34 and 35 also allowable.

In the event it was intended to reject claims 14-16 over the previously applied Takada patent for anticipation, or obviousness, and amended independent claims 26 and 30 are rejected over Takada, applicants request an opportunity to specifically address such a rejection if and when it is raised.

In this regard, applicants take this opportunity to point out that claim 14 would neither be anticipated by or obvious over Takada.

Takada discloses an optical measuring system for determining a depth D of a step in a profile of an object by using two optical heads 10, 20, as is illustrated in Fig. 1 of Takada. The optical heads direct individual light beams to different points on the object surface for measuring distances D_1 and D_2 of these points from a reference plane by triangulation, with D being $D_1 - D_2$.

Thus, in Takada each of the received signals is separately converted into distances D_1 and D_2 , respectively, and the depth D is obtained from the difference of the two distances (conversion followed by subtraction). Claims 26 and 30, as well as canceled claim 14, require that the signals be subtracted from each other. The resulting signal is then converted into a distance D (subtraction followed by conversion).

Since Takada neither discloses nor suggests the subject matter of claim 14, which is now part of independent claims 26 and 30, the latter are not anticipated by Takada. They are also not obvious over Takada, taken alone or in combination with Sorimachi.

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CONCLUSION

Accordingly, independent claims 26 and 30, and therewith claims 2, 4, 5, 6, 15, 16, 34 and 35, are allowable. Applicants therefore request a formal notification thereof at an early date.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,


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